PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Appellant:	Richard Simons	Examiner:	Aditya S. Bhat
Serial No.	10/822,882	Group Art Unit:	2863
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For:	REMOTE TESTING OF HVAC SYSTEMS		
Docket No.:	H0006930-1161.1163101		

APPEAL BRIEF

Mail Stop Appeal Brief - Patents
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Lynn Thompson — April 27, 2009
Lynn Thompson — Date

Pursuant to 37 C.F.R. § 41.37, Appellant hereby submits this Appeal Brief in furtherance of the Notice of Appeal filed on September 29, 2008 and of the Notice of Panel Decision from Pre-Appeal Review dated March 27, 2009. Appellant authorizes the fee prescribed by 37 C.F.R. § 41.20(b)(2) in the amount of $540.00 to be charged to Deposit Account No. 50-0413. Permission is hereby granted to charge or credit Deposit Account No. 50-0413 for any errors in fee calculation.

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I. REAL PARTY IN INTEREST

The real party in interest is the assignee of record, Honeywell International Inc., a corporation organized and existing under and by virtue of the laws of Delaware, and having its principal offices at 101 Columbia Road, Morristown, New Jersey 07962, USA. An assignment from the inventor, Richard Simons, conveying all right, title and interest in the invention to Honeywell International Inc., has been recorded at Reel 015216, Frame 0009.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

III. STATUS OF CLAIMS

Claims 39-40 and 42-45 stand finally rejected under 35 U.S.C. 102(e) as being anticipated by Hill et al. (U.S. Patent No. 7,092,794). Claim 46 stands finally rejected under 35 U.S.C. § 103(a) as being unpatentable over Hill et al. Claims 1-20, 29-30, 35-38, and 41 stand finally rejected under 35 U.S.C. 103(a) as being unpatentable over Hill et al. in view of AndelmanLelek (NPL). All pending claims, namely claims 1-20, 29-30, and 35-46, are being appealed.

IV. STATUS OF AMENDMENTS

No Amendments were filed after the Final Office Action.

V. SUMMARY OF CLAIMED SUBJECT MATTER[1]

In many cases, HVAC equipment problems are not recognized until the beginning of a heating season (Fall) and/or a cooling season (Spring), and often when the equipment is needed. As a result, HVAC servicing companies often experience an increased demand for their service during these time periods, and HVAC equipment owners are often forced to repair the HVAC equipment at an increased expedited repair cost. Also, many HVAC system owners have

[1] The references to the specification and drawings provided herein are only illustrative and not limiting in any way.

services contracts that cause the HVAC services provider to visit each HVAC system at least once a year to determine if further service is needed to maintain the HVAC system. Many of these visits are unnecessary, and thus can increase the cost to the HVAC services provider and HVAC system owners. (see, for example, specification, page 1, lines 12-21). The present invention relates to efficient methods for testing HVAC systems from a remote location outside of the building structure, and for determining which HVAC systems need maintenance (see, for example, specification at page 2, lines 1-8). In some cases, this includes remotely testing the HVAC systems well before a season change, which may help smooth out the demand for HVAC services providers and reduce repair costs and/or service delays for the HVAC system owners.

Turning now to the claims, where independent claim 1 recites a method for testing an HVAC system for a building structure from a remote location outside of the building structure, where the HVAC system has an active component and a dormant component (see, for example, specification at page 9, lines 4-14). The method steps include receiving a test request from the remote location, performing a test on the dormant component of the HVAC system in response to the test request, producing a test result that includes activating the dormant component, and transmitting the test result to a location outside of the building structure for subsequent analysis (see, for example, specification at page 10, lines 1-5, and page 13, line 4 through page 14, line 6; Figure 5, reference numerals 330-350; Figure 7, reference numerals 520-540).

Dependent claims 2 and 4 recite the method of claim 1 where the active component is a heating component (see, for example, specification at page 9, lines 6-7) or cooling component (see, for example, specification at page 9, lines 8-9), respectively. Dependent claims 3 and 5 recite the method of claims 2 and 4, respectively, where the dormant component is a cooling component (see, for example, specification at page 9, lines 6-8) or a heating component (see, for example, specification at page 9, lines 8-10), respectively. Dependent claim 6 recites the method of claim 1 where the test request is received from a remote computer (see, for example, specification at page 7, lines 3-4). Dependent claims 7-10 recite the method of claim 6 where the test request is received from the remote computer via a telephone line connection, a wireless

connection, a computer network, or the internet, respectively (see, for example, specification at page 7, lines 4-9; page 10, lines 15-18; Figure 3).

Dependent claim 11 recites the method of claim 6 where the HVAC system includes a gateway for receiving the test request from the remote computer, and for communicating with the HVAC system (see, for example, specification at page 10, lines 9-12; page 12, lines 9-16; page 16, lines 15-21; Figure 4, item 143). Dependent claim 12 recites the method of claim 11 where the gateway stores one or more tests (see, for example, specification at page 10, lines 10-20; page 12, lines 9-22; page 16, lines 15-21). Dependent claim 13 recites the method of claim 12 where the gateway submits at least one of the one or more tests to the HVAC system in response to the test request (see, for example, specification at page 10, lines 10-15; page 12, lines 9-16; page 16, lines 15-21). Dependent claim 14 recites the method of claim 13 where the gateway selects a subset of the one or more tests and submits the subset of the one or more tests to the HVAC system in response to the test request (see, for example, specification at page 12, lines 9-16; page 16, lines 15-21).

Dependent claim 15 recites the method of claim 1 where the HVAC system includes two or more zones, and the test that is performed activates the dormant component in conjunction with each of the two or more zones (see, for example, specification at page 16, line 21 through page 17, line 2). Dependent claim 16 recites the method of claim 1 including transmitting a test request to two or more HVAC systems from the remote location (see, for example, specification at page 17, lines 3-7; Figure 8). Dependent claim 17 recites the method of claim 16 where the performing step performs a test on the dormant component of the two or more HVAC systems in response to the test request, and produces a test result for each HVAC system (see, for example, specification at page 17, lines 8-15; Figure 8). Dependent claim 18 recites the method of claim 17 where the transmitting step transmits the test result for each HVAC system to a location outside of the building structure (see, for example, specification at page 17, lines 3-6). Dependent claims 19 and 20 recite the method of claim 1 where the remote location is the same as the remote location that the test result is transmitted, or different than the remote location that the test result is transmitted, respectively (see, for example, specification at page 17, lines 6-7).

Independent claim 29 recites a method for testing an HVAC system for an inside space of a building prior to a heating season, where the HVAC system has a heating component (see, for example, specification at page 18, lines 18-19; Figure 10). The method includes the steps of receiving a test request that is provided from a location remote from the building, and in response to receiving the test request, activating the heating component at a time when the HVAC system would not normally call for heat, and determining if the heating component is in compliance with a number of predetermined conditions (see, for example, specification at page 18, line 20 through page 19, line 10; Figure 10).

Independent claim 30 recites a method for testing an HVAC system for an inside space of a building prior to a cooling season, where the HVAC system has a cooling component (see, for example, specification at page 19, lines 11-13; Figure 11). The method includes the steps of receiving a test request that is provided from a location remote from the building, and in response to receiving the test request, activating the cooling component at a time when the HVAC system would not normally call for cool, and determining if the cooling component is in compliance with a number of predetermined conditions (see, for example, specification at page 19, lines 13-18; Figure 11).

Independent claim 35 recites a method for testing a plurality of HVAC systems each in a different building structure or in a different region of a common building structure from a remote location, where the HVAC systems have an active component and a dormant component (see, for example, specification at page 17, lines 8-9; Figure 8). The method includes the steps of transmitting a test request to each of the plurality of HVAC systems from the remote location, performing one or more tests on each of the HVAC systems in response to the test request, and producing a test result for each of the HVAC systems, where at least one of the one or more tests that is performed activates and tests one or more of the active or dormant components of an HVAC system (see, for example, specification at page 17, line 10 through page 18, line 2; Figure 8). The method further includes the steps of transmitting the test result for each of the HVAC systems to a remote location, and storing the test results at the remote location (see, for example, specification at page 16, lines 15-17; page 14, lines 15-17).

Dependent claims 36 and 37 recite the method of claim 35 where at least one of the one or more tests that is performed activates and tests the active component or dormant component, respectively, of the corresponding HVAC system in response to the test request (see, for example, specification at page 17, line 16 through page 18, line 2). Dependent claim 38 recites the method of claim 37 where at least one of the one or more tests that is performed activates and tests the active component of the corresponding HVAC system in response to the test request (see, for example, specification at page 17, line 16 through page 18, line 2).

Independent claim 39 recites a method for determining which of a plurality of HVAC systems will require maintenance (see, for example, specification at page 18, lines 3-11; Figure 9). The method includes the steps of transmitting a test request to each of the plurality of HVAC systems from the remote location, performing one or more tests on at least selected ones of the HVAC systems in response to the test request, and producing a test result for each of the selected HVAC systems, transmitting the test result for each of the selected HVAC systems to a remote location, storing the test results at the remote location, and identifying which of the HVAC systems will likely need service by analyzing the test results (see, for example, specification at page 18, lines 5-11; Figure 9).

Dependent claim 40 recites the method of claim 39 further comprising the step of providing different test requests to at least two of the plurality of HVAC systems, wherein each test request identifies a different test to perform (see, for example, specification at page 18, lines 12-14). Dependent claim 41 recites the method of claim 40 further comprising the step of charging an owner of an HVAC system an amount that depends on the particular test that is performed on the HVAC system (see, for example, specification at page 18, lines 14-16). Dependent claim 42 recites the method of claim 39 further comprising the step of scheduling service on at least some of the HVAC systems that have been identified as likely needing service (see, for example, specification at page 18, lines 16-17).

Independent claim 43 recites a method of remote testing of HVAC systems comprising the steps of transmitting one or more maintenance signals from a remote unit to a specified group of customer HVAC systems, the specified group being a number less than a total number of

customer HVAC systems in a customer database, receiving the one or more maintenance signals at each of the HVAC systems, the one or more maintenance signals activating an HVAC component, performing a self-test on the activated HVAC component based on the received one or more maintenance signal, generating self-test result signals from the activated HVAC component based on the self-test preformed on the activated HVAC component, transmitting the self-test result signals from the HVAC system to the remote unit, receiving the self-test result signals from the HVAC systems at the remote unit, and storing the self-test result signals at the remote unit (see, for example, specification at page 20, lines 3-15; Figure 12).

Dependent claim 44 recites the method according to claim 43, further comprising the step of determining the specified group of customer HVAC systems based on the specified group of customer HVAC systems being within a specified geographic area prior to the step of transmitting the one or more maintenance signals (see, for example, specification at page 20, lines 16-19). Dependent claim 45 recites the method according to claim 43, further comprising the step of determining which customer HVAC systems from the specified group of customer HVAC systems likely require maintenance based on the self-test signals received by the remote unit (see, for example, specification at page 20, lines 19-21). Dependent claim 46 recites the method according to claim 45, further comprising the step of performing maintenance on the customer HVAC systems that are determined to likely require maintenance based on the self-test signals received by the remote unit (see, for example, specification at page 20, line 21 through page 21, line 2).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1. Whether claims 39-40 and 42-45 are unpatentable under 35 U.S.C. § 102(e) over Hill et al. (U.S. Patent No. 7,092,794).

2. Whether claim 46 is unpatentable under 35 U.S.C. §103(a) over Hill et al. (U.S. Patent No. 7,092,794).

3. Whether claims 1-20, 29-30, 35-38, and 41 are unpatentable under 35 U.S.C. § 103(a) as being unpatentable over Hill et al. (U.S. Patent No. 7,092,794) in view of

AndelmanLelek (NPL).

VII. ARGUMENT

A. Claims 39-40 and 42-45 are patentable over Hill et al. (U.S. Patent No. 7,092,794).

i. Claim 39

Claims 39-40 and 42-45 were rejected under 35 U.S.C. § 102(e) as being anticipated by Hill et al. (U.S. Patent No. 7,092,794). Appellant respectfully disagrees. Independent claim 39 recites numerous specific method steps, many of which are not disclosed or suggested by Hill et al. For example, nowhere do Hill et al. appear to teach or suggest transmitting a test request to each of the plurality of HVAC systems from the remote location, performing one or more tests on at least selected ones of the HVAC systems in response to the test request, producing a test result for each of the selected HVAC systems, and transmitting the test result for each of the selected HVAC systems to a remote location, as recited in claim 39. The Examiner cites to column 2, lines 15-26 as teaching or suggesting the elements of claim 39. Column 2, lines 15-29 of Hill et al. states:

> According to an embodiment of the invention, a method for remotely monitoring and controlling at least one HVAC device includes the steps of (a) providing a server with communications access to an entry device and the at least one HVAC device; (b) querying the at least one HVAC device for status information on a regular basis or when requested by a message from the entry device; (c) sending the status information to the entry device in response to the querying; (d) checking for messages from the at least one HVAC device; (e) automatically updating a database in the server relating to a status of the at least one HVAC device on a regular basis in the absence of the message from the entry device; and (f) changing settings on the at least one HVAC device from the entry device (emphasis added).

This passage merely teaches querying for or accessing status information, sending the status information to the entry device in response to the query, checking for messages, updating a database in the server, and changing setting on an HVAC device. Notably, nothing in this passage teaches or suggests performing one or more tests on at least selected ones of the HVAC

systems in response to a test request, as recited in claim 39. Merely querying an HVAC device for what appears to be already present status information is clearly not equivalent to performing one or more tests on at least selected ones of the HVAC systems in response to a test request, as recited in claim 39.

MPEP § 2131 states:

> "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). ... "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989) (Emphasis Added).

The Examiner appears to be equating Hill et al.'s step of using "entry device 10 to access diagnostic or status information relating to HVAC device 14" (Emphasis Added; see column 2, lines 59-60), or "querying the at least one HVAC device for status information on a regular basis or when requested by a message from the entry device" (Emphasis Added; see column 2, lines 19-22), with the steps recited in claim 39. However, the steps taught by Hill et al. and the claimed steps are clearly different. Hill et al.'s step of accessing what appears to be already present status information clearly cannot be deemed to be identical to the step of performing one or more tests on at least selected ones of the HVAC systems in response to a test request, as recited in claim 39.

The Examiner also cites column 4, lines 39-40 of Hill et al. for the identifying step of claim 39. Column 4, lines 32-45 of Hill et al. states:

> If the message in step 512 is from a user, the message is checked in step 514 to see if the message contains the user name and password. If not, the program reverts to step 510. If so, the user database is queried in step 516 for the password associated with the user name. If the password and name don't match in step 518, the program reverts to step 510. If there is a match, the database is queried in step 520 for the HVAC units associated with the user name. A valid unit list is sent back in step 522. Then, in step 524, server 12 checks to see if a message has been received to display unit information such as that shown in FIG. 7. If so, the database is queried in step 526 for the unit information, after which the unit information is sent in step 528 and control passes to step 524.

(Emphasis added). However, nothing here teaches, discloses or suggests "identifying which of the HVAC systems will likely need service by analyzing the test results". Also, nothing in this passage appears to teach or suggest transmitting a test request to each of the plurality of HVAC systems from the remote location, performing one or more tests on at least selected ones of the HVAC systems in response to the test request, producing a test result for each of the selected HVAC systems, as recited in claim 39.

As noted above, Hill et al. appear to teach a method in which an HVAC device is queried for status information. (See column 1, line 55 through column 2, line 29). Hill et al. also appear to teach "server 12 checks to see if a message has been received to display diagnostic information such as that shown in Fig. 7. If so, the database is queried in step 532 for the diagnostic information, after which the diagnostic information is sent in step 534." (Emphasis added, see column 4, lines 46-51). Column 5, line 6-14 of Hill et al. states:

> Status information on the HVAC devices which is contained in the unit database is either updated on a regular basis or when requested by a message from the entry device. That is, status information can be sent to the server by the HVAC controller on a regular basis, or the server can request the status information from the HVAC controller on a regular basis, in addition to or in place of the server requesting status information in response to a message from the entry device.

(Emphasis added). As can be seen, Hill et al. appear to merely disclose a system in which status information is assessed. Furthermore, column 2, lines 50-64 of Hill et al. states:

> Referring to Fig. 1, an entry device 10 such as a WAP (Wireless Access Protocol) cell phone, a handheld computer, or a PDA (Personal Digital Assistant) connects to a server 12 either via the Internet or a GSM/Internet interface. Entry device 10 is any device that allows a user to enter or receive data, whether over wireless or wired communication paths. Server 12 in turn is connected to an HVAC device 14 through the Internet and/or some other communications link such as the GSM Network or POTS (plain old telephone system) network. A user uses the entry device 10 to *access* diagnostic or status information relating to HVAC device 14. Typical users include an individual owner who wishes to change a setpoint, a service technician who wishes to check diagnostic information, or a building supervisor who wishes to control a number of devices (emphasis added).

(Emphasis added). At most, Hill et al. suggest accessing and checking diagnostic or status information from a remote location, where the diagnostic or status information appears to be

already present in the HVAC device 14. It appears that the diagnostic or status information is generated by the HVAC device 14 itself, and not in response to any remote test request of Hill et al. Clearly, nothing in these passages of Hill et al. suggests performing one or more tests on at least selected ones of the HVAC systems in response to the test request, as recited in claim 39. Rather, Hill et al. appears to only disclose accessing and sending diagnostic or status information (that is likely self generated by the HVAC system at some previous time) upon request.

MPEP § 2131 states:

> "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).
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> ...
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> "[t]he identical invention must be shown in as complete detail as is contained in the ... claim.' *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989)."

As discussed above, Appellant submits that Hill et al. clearly do not teach the identical invention in as complete detail as in the claim, and thus cannot be deemed to anticipate claim 39.

Also, in *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1369-1370 (Fed. Cir. 2008), the Federal Circuit recently noted:

> Because the hallmark of anticipation is prior invention, the prior art reference—in order to anticipate under 35 U.S.C. § 102—must not only disclose all elements of the claim within the four corners of the document, but must also disclose those elements "arranged as in the claim." Connell v. Sears, Roebuck & Co., 722 F.2d 1542, 1548 (Fed. Cir. 1983).

The method of Hill et al. clearly operates fundamentally differently from that recited in claim 39, and therefore, cannot be deemed to disclose all of the steps of claim 39 as arranged in claim 39, as is required for anticipation.

While claims are given the broadest reasonable interpretation, MPEP § 2111 states that the broadest reasonable interpretation must be "consistent with the specification" and "must also be consistent with the interpretation that those skilled in the art would reach". Applicants submit

that equating the information accessing or querying steps of Hill with the steps of transmitting a test request, and performing one or more tests in response to the test request, as recited in claim 39, is not a reasonable interpretation of Hill et al. The Examiner's interpretation of the claims is clearly inconsistent with the specification and is inconsistent with the interpretation that would be reached by one of ordinary skill in the art.

Additionally, the Examiner has given no reasoning or support for the interpretation that accessing what appears to be existing diagnostic or status information in response to a user's entry through the entry device of Hill et al. can somehow be equated with the specific method steps recited in independent claim 39. In the Final Office Action, on page 10, in response to Appellant's previous remarks, the Examiner merely states "[t]he pending claims are believed to read on the prior art of record and the rejection is deemed proper," without providing any support for the position that a step of accessing information is the identical step of transmitting a test request or maintenance signal, and in response, performing a test.

Additionally, if the Examiner is considering the elements recited in claim 39 to be inherent in Hill et al., Appellant submits that there is no basis for such an interpretation. MPEP § 2112 (IV) states:

> The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) (reversed rejection because inherency was based on what would result due to optimization of conditions, not what was necessarily present in the prior art); *In re Oelrich*, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981). "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is **necessarily present** in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.' " *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999).

(Emphasis added). Appellant submits that performing one or more tests on at least selected ones of the HVAC systems in response to the test request is clearly not necessarily present in Hill et al. MPEP § 2112.02 states:

> Under the principles of inherency, if a prior art device, in its normal and usual

> operation, would necessarily perform the method claimed, then the method claimed will be considered to be anticipated by the prior art device. When the prior art device is the same as a device described in the specification for carrying out the claimed method, it can be assumed the device will inherently perform the claimed process. *In re King*, 801 F.2d 1324, 231 USPQ 136 (Fed. Cir. 1986).

(Emphasis added). Hill et al. provide no indication that in the normal and usual operation of their system, the claimed method steps would necessarily be performed. Further, as discussed above, the Examiner has not provided any reasoning to support the assertion that Hill et al. inherently and necessarily performs the claimed method steps.

As set for above, Hill et al. clearly do not appear to teach each and every element of claim 39, as is required for anticipation. Furthermore, there appears to be no reason or motivation to modify the teachings of Hill et al. to arrive at the claimed invention. Therefore, claim 39 is believed to be clearly patentable over Hill et al.

ii. Claim 40

As set forth above, Hill et al. do not appear to teach the identical method steps recited in independent claim 39, from which claim 40 depends. Thus, for the same reasons discussed above, as well as other reasons, claim 40 is also believed to be clearly patentable over Hill et al.

In addition, claim 40 recites the step of providing different test requests to at least two of the plurality of HVAC systems, wherein each test request identifies a different test to perform. The Examiner cites to Figures 1 and 7 and column 3, lines 30-33 of Hill et al. as disclosing this element. Column 3, lines 30-33 of Hill et al. states:

> If so, the unit information, such as the room temperature, set point information, status of operability of certain components of the HVAC device as may be noted in FIG. 7 is displayed in step 236 and program control goes to step 225 after a back button is pressed in step 237.

This does not disclose "providing different test requests to at least two of the plurality of HVAC systems, wherein each test request identifies a different test to perform", as recited in claim 40, in combination with the other elements of claim 39. For these additional reasons, claim 40 is believed to be clearly patentable over Hill et al.

iii. Claim 42

As set forth above, Hill et al. do not appear to teach the identical method steps recited in independent claim 39, from which claim 42 depends. Thus, for the same reasons discussed above, as well as other reasons, claim 42 is also believed to be clearly patentable over Hill et al.

In addition, claim 42 recites the step of "scheduling service on at least some of the HVAC systems that have been identified as likely needing service". The Examiner cites to column 4, lines 41-42 of Hill et al. as disclosing this element. Column 4, lines 41-42 of Hill et al. states:

> A valid unit list is sent back in step 522. Then, in step 524, server 12 checks to see if a message has been received to display unit information such as that shown in FIG. 7.

This does not disclose "scheduling service on at least some of the HVAC systems that have been identified as likely needing service", as recited in claim 42, in combination with the other elements of claim 39. For these additional reasons, claim 42 is believed to be clearly patentable over Hill et al.

iv. Claim 43

As discussed above with regard to independent claim 39, nowhere do Hill et al. appear to teach or suggest receiving the one or more maintenance signals at each of the HVAC systems, the one or more maintenance signals activating an HVAC component, performing a self-test on the activated HVAC component based on the received one or more maintenance signal, generating self-test result signals from the activated HVAC component based on the self-test performed on the activated HVAC component, as well as other elements of claim 43.

Hill et al.'s status information accessing steps are clearly not identical to the steps of transmitting one or more maintenance signals, and performing a self-test based on the received one or more maintenance signal, as recited in claim 43. Hill et al. appears to merely teach accessing what appears to be pre-existing status information of an HVAC system from a remote location. One of ordinary skill in the art would not equate such a step with the claimed steps of

actively transmitting a test request or maintenance signal, and in response, performing a test. The Examiner's interpretation of the claims is inconsistent with the specification and is inconsistent with the interpretation that would be reached by one of ordinary skill in the art.

Moreover, nowhere do Hill et al. appear to teach or suggest receiving the one or more maintenance signals at each of the HVAC systems, the one or more maintenance signals activating an HVAC component, performing a self-test on the activated HVAC component based on the received one or more maintenance signal, generating self-test result signals from the activated HVAC component based on the self-test performed on the activated HVAC component, as recited in claim 43. Hill et al. do not appear to teach each and every element of independent claim 43, as is required for anticipation. Nor would there appear to be any reason or motivation to modify the teachings of Hill et al. to arrive at the claimed invention. For these and other reasons, claim 43 is thus believed to be clearly patentable over Hill et al.

v. Claim 44

As set forth above, Hill et al. do not appear to teach the identical method steps recited in independent claim 43, from which claim 44 depends. Thus, for the same reasons discussed above, as well as other reasons, claim 44 is also believed to be clearly patentable over Hill et al.

In addition, claim 44 recites the step of "determining the specified group of customer HVAC systems based on the specified group of customer HVAC systems being within a specified geographic area prior to the step of transmitting the one or more maintenance signals". The Examiner cites to Figures 6-7 as disclosing this element. Upon review, however, Figures 6-7 do not appear to teach, disclose or suggest the specific method step of "determining the specified group of customer HVAC systems based on the specified group of customer HVAC systems being within a specified geographic area prior to the step of transmitting the one or more maintenance signals", as recited in claim 44, in combination with the other elements of claim 43. For these additional reasons, claim 44 is believed to be clearly patentable over Hill et al.

vi. Claim 45

As set forth above, Hill et al. do not appear to teach the identical method steps recited in independent claim 43, from which claim 45 depends. Thus, for the same reasons discussed above, as well as other reasons, claim 45 is also believed to be clearly patentable over Hill et al.

In addition, claim 45 recites the step of "determining which customer HVAC systems from the specified group of customer HVAC systems likely require maintenance based on the self-test signals received by the remote unit". The Examiner cites to Figures 6-7 as disclosing this element. Upon review, however, Figures 6-7 do not appear to teach, disclose or suggest the specific method step of "determining which customer HVAC systems from the specified group of customer HVAC systems likely require maintenance based on the self-test signals received by the remote unit", as recited in claim 45, in combination with the other elements of claim 43. For these additional reasons, claim 45 is believed to be clearly patentable over Hill et al.

B. Claim 46 is patentable over Hill et al.

As discussed above in section A, sub-sections *(iv)* and *(vi)*, Hill et al. fails to teach the specific method steps recited in independent claim 45. For similar and other reasons, claim 46, which depends from claim 45 and includes significant additional distinguishing features, is also believed to be clearly patentable over Hill et al.

C. Claims 1-20, 29-30, 35-38, and 41 are patentable over Hill et al. in view of AndelmanLelek (NPL).

i. Claim 1

Claim 1 recites a method for testing an HVAC system for a building structure from a remote location outside of the building structure, where the HVAC system has an active component and a dormant component. Claim 1 recites the steps of receiving a test request from the remote location, performing a test on the dormant component of the HVAC system in response to the test request, and producing a test result, the test including activating the dormant component, and transmitting the test result to a location outside of the building structure for subsequent analysis.

As detailed above, Hill et al. appears to disclose a system that merely queries for status information, checks for messages, and displays diagnostic information in response to the query. Hill et al. does not appear to teach, disclose, or suggest: receiving a test request from the remote location; performing a test on a dormant component of the HVAC system in response to the test request, and transmitting the test result to a location outside of the building structure for subsequent analysis, as recited in claim 1.

The Examiner asserts the AndelmanLelek reference teaches testing a dormant component of an HVAC system and asserts that it would have been obvious to modify the method of Hill et al. to include off season testing to ensure the HVAC system was functioning properly before the season change to minimize/eliminate service interruption. Appellant respectfully disagrees. The Examiner's reason for combining Hill et al. and AndelmanLelek appears to come from Appellant's own specification, which is clearly improper.

AndelmanLelek is a proposal for building commissioning services at Ashland High School in support of a design and construction process. The Seasonal Testing paragraph that is referenced by the Examiner calls for testing portions of systems that are weather dependent during the opposite season that they were originally installed, where the installation takes place during the "off" season. More specifically, AndelmanLelek states, "[i]f an air handling unit was commissioned during the summer a follow-up test would be performed during the winter for items such as the heating valve and damper controls." (Emphasis Added). This, however, would appear to teach having the HVAC contractor physically return in the winter to test, for example, a heating valve that was installed in the summer. That is, AndelmanLelek appear to teach in-season testing. AndelmanLelek's teaching of testing the heating system in the winter is directly opposite to the method steps recited in claim 1. More specifically, AndelmanLelek appears to teach that when a heating system is commissioned in the summer, the contractor must come back to test the heating system in the winter (i.e. during the in-season) to verify stability of control.

The Seasonal Testing paragraph appears to relate to part of the commissioning process in order to make sure that the systems that were originally installed during the construction process were stable during the season that they were intended to serve. The Seasonal Testing paragraph

of AndelmanLelek does not appear to relate to on-going maintenance of the installed systems after commissioning is complete, and nowhere does AndelmanLelek appear to teach, disclose, or suggest receiving a test request from a remote location; performing a test on a dormant component of the HVAC system in response to the test request, and transmitting the test result to a location outside of the building structure for subsequent analysis, as recited in claim 1. Thus, neither Hill et al. nor AndelmanLelek teach or suggest many of the elements of claim 1.

Moreover, AndelmanLelek does not appear to teach sending or receiving a test request and performing a test in response to the test request. Instead, AndelmanLelek merely notes that when a heating system is installed in summer, the contractor must return to test the heating system in the winter to verify stability of control. Thus, even if one were to combine the references, one would not arrive at the claimed invention. Additionally, the Examiner has failed to provide any reasoning as to why it would be obvious to modify Hill et al. to perform a test on the dormant component of the HVAC system in response to a test request provided from a remote location in order to arrive at claim 1, particularly in view of the teaching in AndelmanLelek of having an HVAC contractor physically return in the winter (i.e. during the in-season) to test portions of the heating system that was installed in the summer. As the Examiner is well aware of:

> The key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. The Supreme Court in *KSR* noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Court quoting *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006), stated that "'[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.'" *KSR*, 550 U.S. at ___, 82 USPQ2d at 1396.

(See MPEP § 2141). Nowhere has the Examiner provided any articulated reasoning with rational underpinning as to why it would be obvious to, for example, receive a test request from a remote location, perform a test on the dormant component of the HVAC system in response to the test request, and produce a test result, the test including activating the dormant component, and transmitting the test result to a location outside of the building structure for subsequent

analysis, as recited in claim 1. Hill et al. and AndelmanLelek each fail to teach or suggest the specific method steps recited in claim 1. Additionally, there would appear to be no motivation for one of ordinary skill in the art to combine or modify their teachings to achieve the claimed method steps. Claim 1 is thus believed to be clearly patentable over Hill et al. in view of AndelmanLelek.

ii. Claim 29

As detailed above, nowhere do Hill et al. or AndelmanLelek, taken alone or in combination, teach or suggest receiving a test request that is provided from a location remote from the building, and in response to receiving the test request: activating the heating component at a time when the HVAC system would not normally call for heat, and determining if the heating component is in compliance with a number of predetermined conditions. The Examiner asserts that since AndelmanLelek teach retesting HVAC components in the opposite season from when they are installed, "clearly they were tested in the season they were not required." As discussed above, AndelmanLelek appear to teach installing a heater in the summer, and having the contractor return in the winter for in-season testing of the heater for stability and control. At best, AndelmanLelek might suggest installing and commissioning a heater in the summer, with the so-called "off-season" testing being relate to the basic setup that would be performed by the on-site contractor during initial installation. However, such summer testing would clearly be performed by the contractor during installation (i.e. when the contractor is already on site), and thus there would be no reason or motivation whatsoever for an HVAC system to receive a test request that is provided from a location remote from the building, and in response to receiving the test request, activate the heating component at a time when the HVAC system would not normally call for heat, and determine if the heating component is in compliance with a number of predetermined conditions, as recited in claim 29. Not only does the recited combination not result in the specific method steps recited in claim 29, but it does not even make sense since the installer would have ready on-site access to the status information of Hill et al. during the installation process. Hill et al. and AndelmanLelek each fail to teach or suggest the specific

method steps recited in claim 29. Additionally, there is no motivation for one of ordinary skill in the art to combine or modify their teachings to achieve the claimed method steps. Claim 29 is thus believed to be clearly patentable over Hill et al. in view of AndelmanLelek.

iii. Claim 30

As discussed above, nowhere do Hill et al. or AndelmanLelek, taken alone or in combination, teach or suggest receiving a test request that is provided from a location remote from the building, and in response to receiving the test request: activating the cooling component at a time when the HVAC system would not normally call for cool, and determining if the cooling component is in compliance with a number of predetermined conditions. The Examiner asserts that since AndelmanLelek teach retesting HVAC components in the opposite season from when they are installed, "clearly they were tested in the season they were not required." As discussed above, AndelmanLelek appear to teach installing a heater in the summer, and having the contractor return in the winter for in-season testing of the heater for stability and control. At best, AndelmanLelek might suggest installing and commissioning a heater in the summer, with the so-called "off-season" testing being related to the basic setup that would be performed by the on-site contractor during initial installation. However, such summer testing would clearly be performed by the contractor during installation (i.e. when the contractor is already on site), and thus there would be no reason or motivation whatsoever for a contractor to receive a test request that is provided from a location remote from the building, and in response to receiving the test request, activate the cooling component at a time when the HVAC system would not normally call for cool, and determine if the cooling component is in compliance with a number of predetermined conditions, as recited in claim 30. Not only does the recited combination not result in the specific method steps recited in claim 30, but it does not even make sense since the installer would have ready on-site access to the status information of Hill et al. during the installation process. Hill et al. and AndelmanLelek each fail to teach or suggest the specific method steps recited in claim 30. Additionally, there is no motivation for one of ordinary skill in the art to combine or modify their teachings to achieve the claimed method steps. Claim 30 is

thus believed to be clearly patentable over Hill et al. in view of AndelmanLelek.

iv. Claim 35

As discussed above, nowhere do Hill et al. or AndelmanLelek, taken alone or in combination, teach or suggest transmitting a test request to each of the plurality of HVAC systems from the remote location, performing one or more tests on each of the HVAC systems in response to the test request, and producing a test result for each of the HVAC systems, wherein at least one of the one or more tests that is performed activates and tests one or more of the active or dormant components of an HVAC system, transmitting the test result for each of the HVAC systems to a remote location, and storing the test results at the remote location. While Hill et al. appear to teach remotely accessing status information regarding an HVAC system, and AndelmanLelek appear to teach having a contractor return and test a heater during the winter (i.e. in-season) when the heater was installed in the summer, neither reference nor their combination teach the specific method steps of claim 35 including the steps of transmitting a test request from a remote location, and performing a test on an HVAC component in response to the test request. The Examiner has thus failed to provide references that teach or suggest each and every elements of claim 35, and has not provided articulate reasoning to support the conclusion of obviousness. Claim 35 is thus believed to be clearly patentable over Hill et al. in view of AndelmanLelek.

v. Claims 2-20, 36-38, 41

For at least the reasons set forth above, neither Hill et al., AndelmanLelek, nor their combination appears to teach the identical method steps recited in independent claims 1 and 35, and 39, from which claims 2-20, 36-38, and 41 depend. Dependent claims 2-20, 36-38, and 41 recite the specific method steps of their independent claims, and include significant additional distinguishing features. Neither of the cited references appear to teach or suggest such specific method steps. Furthermore, there would appear to be no reason for one of ordinary skill in the art to modify the methods of Hill et al. and/or AndelmanLelek to arrive at the specific method

art to modify the methods of Hill et al. and/or AndelmanLelek to arrive at the specific method steps recited in these claims. Dependent claims 2-20, 36-38, and 41 are thus also believed to be clearly patentable over Hill et al. and AndelmanLelek.

D. Conclusion.

For the reasons stated above, the rejection of claims 39, 40, and 42-45 under 35 U.S.C. §102(e), the rejection of claim 46 under 35 U.S.C. § 103(a), and the rejection of claims 1-20, 29-30, 35-38, and 41 under 35 U.S.C. § 103(a), should all be reversed.

Respectfully Submitted,

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VIII. CLAIMS APPENDIX

1. A method for testing an HVAC system for a building structure from a remote location outside of the building structure, the HVAC system having an active component and a dormant component, the method comprising the steps of:

receiving a test request from the remote location;

performing a test on the dormant component of the HVAC system in response to the test request, and producing a test result, the test including activating the dormant component; and

transmitting the test result to a location outside of the building structure for subsequent analysis.

2. The method of claim 1 wherein the active component is a heating component.

3. The method of claim 2 wherein the dormant component is a cooling component.

4. The method of claim 1 wherein the active component is a cooling component.

5. The method of claim 4 wherein the dormant component is a heating component.

6. The method of claim 1 wherein the test request is received from a remote computer.

7. The method of claim 6 wherein the test request is received from the remote computer via a telephone line connection.

8. The method of claim 6 wherein the test request is received from the remote computer via a wireless connection.

9. The method of claim 6 wherein the test request is received from the remote

computer via a computer network.

10. The method of claim 6 wherein the test request is received from the remote computer via the internet.

11. The method of claim 6 wherein the HVAC system includes a gateway for receiving the test request from the remote computer, and for communicating with the HVAC system.

12. The method of claim 11 wherein the gateway stores one or more tests.

13. The method of claim 12 wherein the gateway submits at least one of the one or more tests to the HVAC system in response to the test request.

14. The method of claim 13 wherein the gateway selects a subset of the one or more tests and submits the subset of the one or more tests to the HVAC system in response to the test request.

15. The method of claim 1 wherein the HVAC system includes two or more zones, and the test that is performed activates the dormant component in conjunction with each of the two or more zones.

16. The method of claim 1 including transmitting a test request to two or more HVAC systems from the remote location.

17. The method of claim 16 wherein the performing step performs a test on the dormant component of the two or more HVAC systems in response to the test request, and produces a test result for each HVAC system.

18. The method of claim 17 wherein the transmitting step transmits the test result for each HVAC system to a location outside of the building structure.

19. The method of claim 1 wherein the remote location is the same as the remote location that the test result is transmitted.

20. The method of claim 1 wherein the remote location is different than the remote location that the test result is transmitted.

21-28. (canceled)

29. A method for testing an HVAC system for an inside space of a building prior to a heating season, the HVAC system having a heating component, the method comprising the steps of:

receiving a test request that is provided from a location remote from the building, and in response to receiving the test request:

activating the heating component at a time when the HVAC system would not normally call for heat; and

determining if the heating component is in compliance with a number of predetermined conditions.

30. A method for testing an HVAC system for an inside space of a building prior to a cooling season, the HVAC system having a cooling component, the method comprising the steps of:

receiving a test request that is provided from a location remote from the building, and in response to receiving the test request:

activating the cooling component at a time when the HVAC system would not normally

call for cool; and

determining if the cooling component is in compliance with a number of predetermined conditions.

31-34. (canceled)

35. A method for testing a plurality of HVAC systems each in a different building structure or in a different region of a common building structure from a remote location, the HVAC systems having an active component and a dormant component, the method comprising the steps of:

transmitting a test request to each of the plurality of HVAC systems from the remote location;

performing one or more tests on each of the HVAC systems in response to the test request, and producing a test result for each of the HVAC systems, wherein at least one of the one or more tests that is performed activates and tests one or more of the active or dormant components of an HVAC system;

transmitting the test result for each of the HVAC systems to a remote location, and

storing the test results at the remote location.

36. The method of claim 35 wherein at least one of the one or more tests that is performed activates and tests the active component of the corresponding HVAC system in response to the test request.

37. The method of claim 35 wherein at least one of the one or more tests that is performed activates and tests the dormant component of the corresponding HVAC system in response to the test request.

38. The method of claim 37 wherein at least one of the one or more tests that is

performed activates and tests the active component of the corresponding HVAC system in response to the test request.

39. A method for determining which of a plurality of HVAC systems will require maintenance, the method comprising the steps of:

transmitting a test request to each of the plurality of HVAC systems from the remote location;

performing one or more tests on at least selected ones of the HVAC systems in response to the test request, and producing a test result for each of the selected HVAC systems;

transmitting the test result for each of the selected HVAC systems to a remote location;

storing the test results at the remote location; and

identifying which of the HVAC systems will likely need service by analyzing the test results.

40. The method of claim 39 further comprising the step of providing different test requests to at least two of the plurality of HVAC systems, wherein each test request identifies a different test to perform.

41. The method of claim 40 further comprising the step of charging an owner of an HVAC system an amount that depends on the particular test that is performed on the HVAC system.

42. The method of claim 39 further comprising the step of scheduling service on at least some of the HVAC systems that have been identified as likely needing service.

43. A method of remote testing of HVAC systems comprising the steps of:

transmitting one or more maintenance signals from a remote unit to a specified group of customer HVAC systems, the specified group being a number less than a total number of

customer HVAC systems in a customer database;

receiving the one or more maintenance signals at each of the HVAC systems, the one or more maintenance signals activating an HVAC component;

performing a self-test on the activated HVAC component based on the received one or more maintenance signal;

generating self-test result signals from the activated HVAC component based on the self-test preformed on the activated HVAC component;

transmitting the self-test result signals from the HVAC system to the remote unit;

receiving the self-test result signals from the HVAC systems at the remote unit; and

storing the self-test result signals at the remote unit.

44. The method according to claim 43, further comprising the step of determining the specified group of customer HVAC systems based on the specified group of customer HVAC systems being within a specified geographic area prior to the step of transmitting the one or more maintenance signals.

45. The method according to claim 43, further comprising the step of determining which customer HVAC systems from the specified group of customer HVAC systems likely require maintenance based on the self-test signals received by the remote unit.

46. The method according to claim 45, further comprising the step of performing maintenance on the customer HVAC systems that are determined to likely require maintenance based on the self-test signals received by the remote unit.

IX. EVIDENCE APPENDIX

No additional evidence has been presented.

X. RELATED PROCEEDINGS APPENDIX

There are no related appeals or interferences.